

What is claimed is:

1. An electrode arrangement for an electric slag melting furnace comprising a bottom wall and at least one side wall defining a furnace interior, said furnace having vertical electrodes for supply of electric current, said vertical electrodes being intended to be submerged in a liquid slag bath, said electrode arrangement being characterized in that the furnace has at least one side wall contact extending into the furnace interior through a side wall of the furnace.
2. Electrode arrangement according to claim 1 wherein there are two or more side wall contacts and all the side wall contacts are electrically interconnected.
3. Electrode arrangement according to claim 1, characterized in that at least three side wall contacts are equally circumferentially spaced around the furnace side wall.
4. Electrode arrangement according to claim 1, characterized in that the side wall contacts are carbon bodies inserted into sealed openings in the side wall of the furnace.
5. Electrode arrangement according to claim 1, characterized in that each side wall contact is equipped with means for moving the side wall contact radially into the furnace in order to compensate for wear of the side wall contacts.
6. Electrode arrangement according to claim 1, characterized in that the side wall contacts are hollow and have means for feeding slag forming components through the hollow contacts.

7. An electrode arrangement according to claim 1, wherein said vertical electrodes supply alternating current.

8. A process for heating a mass of slag in an electric slag smelting furnace comprising a bottom wall and at least one side wall defining a furnace interior, a plurality of vertical electrodes above said interior, and at least one side wall contact extending into said interior, said process comprising passing an electric current from at least one of said vertical electrodes through a mass of slag in said interior and to at least one of said side wall contacts.

9. The process of claim 8, wherein said electric current comprises an alternating current.

10. The process of claim 8, wherein at least one of said side wall contacts is hollow and defines an opening, said process further comprising feeding slag forming components through said opening into said furnace interior.

11. The process of claim 8, wherein said bottom includes a lining comprising an electrically insulating refractory material.